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ORIGINAL ARTICLE

Evaluation of the eating attitude of handball players

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Abstract. *Study Objectives:* This study aimed to evaluate the eating attitudes of handball players according to some variables. *Methods:* One hundred twenty volunteer handball players participated in the study. The questionnaire consisted of the information questionnaire that determined the demographic characteristics and the eating attitude test EAT-26, which was adapted to Turkish by Devran (2014). After the scales were prepared on google-form, the research was announced on social media, and participation was provided voluntarily. When the data used in the study were analyzed with the Kolmogorov-Smirnov test, the Mann-Whitney U, and Kruskal-Wallis tests, which were nonparametric. *Results:* In the study, normal eating attitudes and behaviors were observed in 83.3% of the athletes, and abnormal eating attitudes and behaviors were observed in 16.7%. When the eating attitude scores of the athletes were compared according to the variables of gender, nutrition program implementation, dietitian support, and body weight perception, a statistically significant difference was observed, and no difference was observed in terms of age, educational status, sports age, weekly training time ($p < 0.05$). Moreover, it was found that the difference in the sub-dimensions was significant according to the gender and body weight perception variable, the eating attitude scores of females were higher than males was due to the bulimic behavior sub-dimension, and according to the bodyweight perception, it was found that the athletes who stated themselves as weak in the oral control behavior dimension ($p < 0.05$). *Conclusion:* When the eating attitude scores of the athletes according to gender, nutritional program application status, dietician support variables, and body weight perception were compared, significance was found ($p < 0.05$). It was known that eating disorders had very negative effects on athlete's health and performance. Therefore, unhealthy exercise and diet programs should be avoided and the importance of healthy nutrition should be emphasized.

Key words: Nutrition, Handball players, Eating attitude

Introduction

Nutrition is an action that should be done consciously to provide growth and development, to protect health, and to increase the quality of life by taking the nutrients needed for the body in the right, balanced and sufficient amount (1). Sports are all activities with predetermined rules, which are performed individually or collectively, to develop both physically and mentally (2). Athlete nutrition refers to the application of nutritional knowledge to the eating program to provide energy for the movement and training program, to perform the body repair process, to prevent injuries, to optimize performance in sports competitions, and to look healthy and good (3). Everyone needs a proper nutrition program, whether walking or running a marathon have performed. This nutrition program should contain sufficient amounts of protein, carbohydrates, fat, vitamins-minerals and water. Inadequate consumption of nutrients affects health and performance negatively. Optimal nutrition that continues throughout the season increases the condition in intensive

training programs. Increasing condition determines the difference between winning and losing (4).

Handball sport includes motor skills such as mobility, speed, jumping, shooting force, resistance, and coordination. A handball player who has very good technique and tactics should successfully apply the basic motoric features (5). Moreover, genetic structure, appropriate training, and nutrition are the most fundamental factors affecting an athlete's performance (4). It is impossible to expect high performance from an athlete who is not healthy and undernourished. For this reason, athletes train most of their time to increase their performance. Nutrition is very important to ensure high efficiency in this training (6).

Eating attitude is a concept that can be affected by cultural, sociological, physiological, and psychological factors. People may prefer to eat not only when they are hungry, but also to get rid of the negative emotions they have faced. This situation appears as an eating disorder. Overeating or not eating at all, discarding the food eaten without digestion, eating non-eating items are eating disorders. Obsession with body weight, fear of gaining weight, tendency to be thin, negative thoughts about the postural appearance of the body, and accompanying affective disorders are defined as eating behavior disorders (7). Considering that failure to show success in races such as the Olympics watched by the whole world puts pressure on the self-presentations of athletes (8), on the other hand, eating disorders can be seen in athletes when they experience excessive desire to compete, adapt to the ideal body perception, physical and emotional effort and sports (9). Trainers, dieticians, psychologists, and sports physicians should know how to approach and support athletes who are especially at risk and diagnosed with eating disorders. Moreover, the diet for bodyweight management should be applied under the supervision of a doctor and dietician by monitoring its side effects (10), and especially trainers should understand the physiological importance of proper nutrition.

For this reason, comparing the physical characteristics of the athletes and determining their strengths and weaknesses is informative for pre-competition preparations. Evaluation of eating attitude helps to determine whether any effects may overshadow performance, to increase performance to the desired level, and to ensure well-being (11). In this context, the study aimed to evaluate the eating attitudes of handball players according to some variables.

Methods

The research was quantitative research. One hundred twenty volunteer handball players from 7 provinces (Trabzon, Artvin, Ordu, Kastamonu, Tokat, Kırşehir, Ankara) competing in the 2nd league participated in the study. The questionnaire consisted of the information questionnaire that determined the demographic characteristics and the eating attitude test EAT-26, which was adapted to Turkish by Devran (2014). After the scales were prepared on google-form, the research was announced on social media, and participation was provided voluntarily (12)

Eating Attitude Test (EAT-26)

The Eating Attitude Test (EAT-26), which was 6 Likert-type scale that can be applied to all individuals between the ages of 11-70 and was based on the EAT 40 test, was used to measure the disorders in eating attitudes and behaviors. The test was adapted to Turkish by Devran (2014) and the cut-off point score was 20 (12). As the score obtained from the scale increased, the presence of eating attitude disorder became more pronounced. At the same time, the test had 3 subdimensions as dieting behavior, bulimic behavior, and oral control behavior. Among these sub-dimensions, dieting score was calculated by 1,6,7,10,11,12,14,16,17,22,23,24,26 questions, bulimic behavior score was calculated by 3,4,9,18,21 and 25 questions, and the oral control behavior question was calculated by 2,5,8,13,15,19,20 questions. Score results of 20 and above were evaluated as "unhealthy and abnormal eating behavior", and below 20 as "normal eating behavior" (13). The internal consistency level of the test (Cronbach's Alpha) was calculated as 0.79.

Ethical Approval

This study was approved by the ethical and scientific ethics committee members from the Artvin

Çoruh University Faculty of Scientific Research and Publication Ethics Committee and decided by the ethics committee members. (Decision no: E-18457941-050.99-8684).

Statistical Analysis

To analyze the data in the study statistically, descriptive statistical analysis was performed according to the demographic variables of the participants, their body weight perception, the status of nutrition program implementation, and the dietitian support they received. When the data used in the study were evaluated with a normal distribution or not, the Mann-Whitney U test was used for the comparison of the independent clusters among the nonparametric tests, and the Kruskal-Wallis test was used for the comparison of three or more clusters, as the statistical significance level was taken as $p < 0.05$ in the analysis of all tests.

Table 1. Demographic Characteristics of Athletes

Total Participant(n=120)	**n**	**%**
Gender		
Female	46	38.3
Male	74	61.7
Age Group		
10-19 aged	47	39.2
20-29 aged	47	39.2
30-39 aged	10	8.3
40-49 aged	16	13.3
Educational Status		
High school	57	47.5
Associate Degree	23	19.2
License	40	33.3
Body Weight Perception		
Thin	10	8.3
Normal	94	78.3
Overweight	16	13.3
Sport Experience		
0-10 years	85	70.8
11-20 years	25	20.8
21-30 years	10	8.3
Weekly Training time		
0-4 hours	57	47.5
5-9 hours	30	25
10-14 hours	33	27.5
Nutrition-Related Program Implementation Status		
Yes	30	25
No	90	75
Dietician Support Status		
Receives Support	14	11.7
Not Receives Support	106	88.3

Results

When the demographic characteristics of the athletes were evaluated in the study, which was performed with the participation of 120 athletes, 46 of the participants were female (38.3%) and 74 were male (61.7%). Considering the distribution of age groups, 47 of them were in the 10-19 age range (39.2), 47 were in the 20-29 age range (39.2%), 10 were in the 30 -39 age range (8.3%) and 16 were in the 40-49 age range (13.3%). Besides, 47.5% of the athletes were at the high school level, 33.3% were at the undergraduate level and 19.2% were at the associate degree education level. It was determined that 78.3% of the bodyweight perception of athletes was normal, 13.3% was obese and 8.3% was thin. When the sports experience distribution of the athletes was examined, 70.8% of the athletes were doing sports for 0-10 years, 20.8% for 11-20 years, and 8.3% for 21 years and more, and It was determined that 47.5% of the athletes were training between 0-4 hours a week, 27.5% were training 10 to 14 hours of training per week and 25.5% were training to 5 to 9 hours per week. It was found that 75% of the athletes did not apply for a nutrition program, 25% of them applied for a certain nutrition program, and 88.3% of the athletes stated that they did not receive any dietician support, while 11.7% stated that they received dietician support.

It was found that 83.3% of the athletes participating in the study had normal eating attitudes and behaviors, and 16.7% had abnormal eating behavior. Moreover, while the normal eating behavior level was higher in males (90.5%), the abnormal eating behavior level was found to be higher in females (28.3%) (Table 2).

Table 2. Level of Eating Attitudes of Athletes

Eating Attitude and Behavior	n	Total (%)	Female (%)	Male (%)	Mean ± Std. D.
Normal Eating Attitude (EAT<20)	100	83.3	71.7	90.5	1.67±0.47
Abnormal Eating Attitude (EAT≥20)	20	16.7	28.3	9.5	1.35±0.49

Table 3. Comparing the EAT-26 scores according to the variables of gender, nutrition program implementation and dietitian support

	n	Rank Mean	Rank Total	p	U
Gender					
Female	46	77.43	3562	**0.001***	**923**
Male	74	49.97	3698		
Nutrition-Related Program Implementation Status					
Yes	30	72.2	2166.5	**0.033***	**998.5**
No	90	56.6	5093.5		
Dietician Support Status					
Receives Support	14	83.21	1165	**0.009***	**424**
Not Receives Support	106	57.50	6095		

*p<0.05

According to the results of the Mann-Whitney U Test, which was conducted to compare the EAT-26 scores according to the variables of gender, nutrition program implementation and dietitian support variables, the difference between EAT-26 scores was found to be significant. According to the gender status of the athletes, the EAT-26 scores of the female were found to be significantly higher than the male. The EAT-26 scores of the students who applied for the program according to the nutritional program implementation status of the athletes were significantly higher than the athletes who did not apply for a program. According to the status of athletes receiving dietician support, the EAT-26 scores of the athletes who received support were higher than the athletes who did not receive dietician support (Table 3).

The results of the Kruskall Wallis Test conducted to compare the EAT-26 scores according to the age, educational status, sports age, body weight perception, and weekly training time of the athletes were given in Table 4. It was determined that the difference between the EAT-26 scores according to the age group, educational status, sports age, weekly training time of the students participating in the study was not statistically significant (p> 0.05), but it was found to differ significantly according to the body weight perception variable of the athletes (p<0.05). Accordingly, according to the bodyweight perception of athletes, EAT-26 scores were higher in those who were thin compared to those who had normal body weight perception and those who were overweight (Table 4).

Generally, it was determined that the mean of eating attitude and behavior sub-dimensions of female and male were low, the lowest mean was in the bulimic behavior dimension, and the highest mean was in the dieting behavior dimension (Table 5).

According to the gender variable, a significant difference was observed in eating attitudes and behaviors, it was found that females had higher eating attitudes and behaviors scores compared to males (Table 6).

It was found that there was no statistically significant difference in diet behavior and bulimic behavior, which were among the sub-dimensions of eating attitudes and behaviors according to body weight perception (p <0.05), but athletes who stated their body weight perception as thin in the oral control behavioral dimension had higher mean rank than overweight athletes. (Table 7).

Table 4. Comparing the EAT-26 scores according to the age, educational status, sports age, body weight perception and weekly training time

	n	Mean Rank	df	χ^2	p
Age Group					
10-19 aged	47	59.82	3	0.66	0.880
20-29 aged	47	62.17			
30-39 aged	10	64.55			
40-49 aged	16	55.06			
Educational Status					
High School	57	61.20	2	1.03	0.600
Associate Degree	23	54.15			
License	40	63.15			
Body Weight Perception					
Thin	10	95.55	2	11.15	**0.004***
Normal	94	57.53			
Overweight	16	56.03			
Sports experience					
0-10 years	85	60.66	2	2.01	0.370
11-20 years	25	65.36			
21-30 years	10	47.0			
Weakly Training Time					
0-4 hours	57	64.22	2	1.45	0.480
5-9 hours	30	55.07			
10-14 hours	33	59.02			

*p<0.05; df: degree of freedom

Table 5. Descriptive Statistics on Eating Attitudes and Behaviors

EAT-26 Sub-Dimensions	n	Gender	Mean ± Std. D.
Diet	46	Female	7.04±6.08
	74	Male	4.51±5.21
Bulimia	46	Female	3.37±2.99
	74	Male	1.11±1.56
Oral Control	46	Female	6.20±3.45
	74	Male	4.91±3.24
EAT-26 Total Score	46	Female	16.61±8.52
	74	Male	10.52±7.26

Table 6. Comparison of Eating Attitudes Sub-Dimensions According to the Gender Variable

EAT-26	Gender	n	Mean Rank	Total Rank	U	p
Diet Behavior	Female	46	71.79	3302.5	**1182.5**	**0,001***
	Male	74	53.48	3957.5		
Bulimic Behavior	Female	46	76.96	3540	**945**	**0,001***
	Male	74	50.27	3720		
Oral Control	Female	46	68.74	3162	**1323**	**0,039***
	Male	74	55.38	4098		
EAT-26 Total Score	Female	46	77.43	3562	**923**	**0,001***
	Male	74	49.97	3698		

*p<0.05

Discussion and Conclusion

Nowadays, athletes tried to be the best in the sport they fight. This situation triggered the urge to compete excessively in athletes. The pressure exerted on the athletes by both the club, the coach, and the family can cause eating disorders (9). The pressure exerted on the athletes by both the club, the coach, and the family can cause eating disorders. However, with the intense physical and mental effort of athletes and a well-planned nutrition program, there may be a serious decrease in the rate of eating disorders. Thus, in this study, normal eating attitudes and behaviors were observed in 83.3% of the athletes, and abnormal eating attitudes and behaviors were observed in 16.7% of the athletes. Özvurmaz et al. (2018) also found that approximately one-third of the students participating in the study had eating disorders (14) similar to this study. It can be thought that the reason why the athletes participating in our study showed a high rate of normal eating attitude was due to regular training and conscious nutrition programs. When the eating attitude scores of the athletes were compared according to the gender, nutrition program implementation and dietitian support sub-dimensions a statistically significant difference was observed (p<0.05). According to the gender status of the athletes, the eating attitude scores of the female were higher. It was stated that the scores of the athletes who applied to the program according to the program application status related to nutrition were higher. It was stated that the eating attitude scores of the athletes who received support were higher than the dietitian support status. When the literature was examined, it was stated that women show more eating disorders than men (7, 15). In addition, socio-cultural pressures on female athletes, physical

Table 7. Comparison of Eating Attitudes and Behaviors Sub-Dimensions According to Bodyweight Perception

EAT-26	Bodyweight Perception	n	Mean Rank	Total Mean	U	p
Diet Behavior	Thin	46	11.65	116.5	61.5	0.325
	Overweight	74	14.66	234.5		
Bulimic Behavior	Thin	46	16.35	163.5	51.5	0.123
	Overweight	74	11.72	187.5		
Oral Control	Thin	46	21.35	213.5	**1.5**	**0,001***
	Overweight	74	8.59	137.5		
EAT-26 Total Score	Thin	46	19.60	196	**19**	**0,001***
	Overweight	74	9.69	155		

*p<0.05

appearance being at the forefront, and accepting weakness as the ideal body image forced females to more exercise and diet (16). It was thought that the high eating attitude scores of the athletes who apply for nutrition-related programs and receive dietician support were related to getting the information right and from the right source. Nutrition programs should be done by a dietician and this idea also supported by the literature (17). Dietitians help detect eating disorders early, especially by noticing changes in nutrition or body weight, and complaints about body image (18). When the bodyweight perception of the athletes was compared with the eating attitude score, a significant difference was observed, and no difference was observed according to age, educational status, sports age according to weekly training time. (p<0.05). Accordingly, it was determined that the eating attitude scores of the athletes according to the body-weight perception were higher than the others. According to the Turkey nutrition and health research results' 57.1% of individuals 19-30 years of age in normal weight, 37.1% were slightly fat and overweight, 5.1% were thin (19). Bodyweight perception on obese individuals causes emotional eating behaviors such as loss of control over food intake and increased food intake, especially when negative emotions such as depression and anxiety (20). When evaluated from this point of view, the results were not similar to our study. It was said that this was due to the intensive training and exercise of the athletes who describe their body weight perception as thin. In the study conducted by Yalçın (2021) with football players, it was determined that football players in the 20-24 age group and 25-29 age group were more prone to eating disorders than those aged 15-19 and over 30 years old (21). In this study, the mean age group of 10-19 and 20-29 was higher and no difference was found between results. Sufficient physical performance can prevent the emergence of negative behaviors in eating attitudes. Again, it may be thought that the lack of difference in the weekly training time was because the sportive performance depends on the day-to-day conditions. When the sub-dimensions of the eating attitude scale were examined in our study, it was found that the mean of the eating attitude subdimensions of women and men were generally low, the lowest mean was in the bulimic behavior dimension, and the highest mean was in the dieting behavior dimension. Dietary restrictions were seen as potential causes of eating disorders such as binge eating disorder and bulimia nervosa (22). At the same time, there was a statistically significant difference in sub-dimensions according to gender and body weight perception variable; It was determined that the high eating attitude scores of women from men were due to the bulimic behavior sub-dimension, and according to bodyweight perception, it was due to athletes who report themselves as weak in oral control behavior dimension.

When the eating attitude scores of the athletes were compared according to gender, nutritional program implementation status, dietician support variables, and body weight perception, a statistically significant difference was found (p<0.05). Eating disorders can have adverse effects on athlete's health and performance. A strong dietitian, nutrition program,

and coach-athlete relationship can protect against eating disorders. On the other hand, gender and body perception variables significantly affect the eating attitude in sub-dimensions. For this reason, unhealthy exercise and diet programs should be avoided and the importance of healthy nutrition should be emphasized.

Conflicts of Interest: No potential conflict of interest was reported by the authors.

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